

REMARKS

This Amendment is fully responsive to the final Office Action dated March 5, 2010, issued in connection with the above-identified application. Claims 1-27 are pending in the present application. With this Amendment, claims 1, 5, 6, 10, 14 and 18 have been amended merely to place the claims in better form for U.S. patent practice. No new matter has been introduced by the amendments made to the claim. Favorable reconsideration is respectfully requested.

In the Office Action, claims 1, 8, 9, 13, 15-17, 19-24, 26 and 27 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Tomohiko (European Publication No. 1134933, hereafter “Tomohiko”) in view of Sharony (U.S. Publication No. 2004/0057459, hereafter “Sharony”); and claims 18 and 25 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Tomohiko in view of Sharony, and further in view of Wakai (U.S. Patent No. 5,973,722, hereafter “Wakai”).

The Applicants respectfully traverse the current rejections to the claims for the reasons noted below. Independent claim 1 recites the following features:

“[a] communication system comprising:

a first communication device; and

a second communication device,

wherein said first communication device includes:

a first content receiving unit operable to receive, via a first communication path, a Multicast frame which stores a content;

a conversion unit operable to convert the received Multicast frame into a Unicast frame addressed to said second communication device; and

a first content transmission unit operable to transmit the converted Unicast frame to said second communication device via a second communication path, based on a protocol having a re-transmission processing, and
said second communication device includes:

a second content receiving unit operable to receive the Unicast frame transmitted via the second communication path from said first communication device based on the protocol having the re-transmission processing,

wherein the re-transmission processing is performed at a layer lower than a layer of a communication protocol defining the Multicast frame. (Emphasis added).

The features emphasized above in independent claim 1 are similarly recited in independent claims 15-20. Additionally, the features emphasized above in independent claim 1 (and similarly recited in independent claims 15-20) are fully supported by the Applicants' disclosure (see e.g., ¶[0068] and ¶[0073]).

The present invention (as recited from independent claims 15-20) is distinguishable from the cited prior art in that a communication system (or method) includes a first communication device that converts the received Multicast frame into a Unicast frame and transmits the converted Unicast frame to a second communication device based on a communication protocol having a re-transmission processing.

A layer of the communication protocol having the re-transmission processing is a layer (e.g., Data Link layer; a MAC layer) lower than a layer (Network layer) of a communication protocol (namely, IP) defining the Multicast frame. In general, re-transmission processing is repeated multiple times until the frame is correctly received. However, the re-transmission at the MAC layer is performed only for Unicast. For a group address such as broadcast or Multicast, receivers do not send such an ACK frame.

In the Office Action, the Examiner relies on the combination of Tomohiko and Sharony for disclosing or suggesting all the features recited in independent claims 1 and 15-17, 19 and 20; and relies on the combination of Tomohiko, Sharony and Wakai for disclosing or suggesting the features of independent claim 18. However, the Applicants assert that no combination of the above cited prior art discloses or suggests all the features recited in independent claims 1 and 15-20.

Tomohiko discloses that if transmission is performed between transfer apparatuses that belong to different Multicast domains, it is not appropriate to employ one-to-many communication, as generally performed by Multicast. Thus, in Tomohiko, the transfer apparatuses communicate over the domains with each other by Unicast, and Unicast is clearly interpreted as one-to-one communication (see e.g., "peer" in ¶[0030]). Additionally, nothing in Tomohiko discloses that Unicast can be interpreted to include retransmission.

Sharony discloses a system and method for wireless network channel management that includes appending a data packet to a data stream queue ("DSQ"), wherein the DSQ has a

priority level. The system and method disclosed in Sharony allocates a quantum of bandwidth to the DSQ and transmits the data packet as a function of the priority level and the quantum of bandwidth. However, Sharony clearly discloses that there is no retransmission processing for IP multicast and broadcast data packets (see e.g., ¶¶0048] and ¶¶0057)).

Therefore, it would not be reasonable for one of ordinary skill in the art to combine the Unicast communication of Tomohiko which is limited to IP Multicast packet transmission with Sharony which clearly discloses that there is no retransmission processing for IP Multicast in order to use wireless retransmission.

Furthermore, Tomohiko discloses Unicast communication at the IP layer (network layer). The Applicants assert that Tomohiko does not correspond to the present invention (as recited in independent claims 15-20) merely because of the use of the term “Unicast” (one-to-one communication). Moreover, the present invention (as recited in independent claims 1 and 15-20) discloses retransmission processing by Unicast at the MAC layer (data link layer), not the IP layer (network layer).

Finally, Wakai discloses an in-flight passenger entertainment system that has a first digital network for communication among components of a headend system including a data server, media controller, one or more media servers, system interface unit, system manager unit and attendant control panel. The first digital network is preferably an ATM network with fiber optic cables used to carry the data, and the second digital network is preferably an IEEE 1394 serial bus network. However, Wakai fails to overcome the deficiencies noted above in Tomohiko and Sharony.

Based on the above discussion, no combination of Tomohiko, Sharony and Wakai would result in, or otherwise render obvious, the features of independent claims 1 and 15-20. Additionally, no combination of Tomohiko, Sharony and Wakai would result in, or otherwise render obvious, the features of claims 1, 8, 9, 13, 21-24, 26 and 27 at least by virtue of their dependencies (directly or indirectly) from independent claims 1 and 15-20.

In the Office Action, claims 2 and 4 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Tomohiko, Sharony, and further in view of Rune (U.S. Publication No. 2006/0062187, hereinafter “Rune”); claim 3 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Tomohiko, Sharony, Rune, and further in view of Tomohiko U.S. Publication No. 2001/0018714, hereafter “Tomohiko-US”); and claims 5 and 10 have been rejected under 35

U.S.C. 103(a) as being unpatentable over Tomohiko, Sharony, and further in view of Zisapel (U.S. Publication No. 2003/0195984, hereinafter “Zisapel”).

Additionally, claim 6 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Tomohiko, Sharony, Zisapel, and further in view of Alexander (U.S. Patent No. 7,411,901, hereinafter “Alexander”); claim 7 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Tomohiko, Sharony, Zisapel, Alexander, and further in view of Lipp (U.S. Patent No. 6,751,219, hereinafter “Lipp”); claims 11 and 12 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Tomohiko, Sharony, Zisapel, and further in view of Lipp and Alexander; and claim 14 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Tomohiko, Sharony, and further in view Wesley (U.S. Patent No. 6,076,114, hereinafter “Wesley”).

Claims 2-7, 10-12 and 14 depend from independent claim 1. As noted above, Tomohiko and Sharony fail to disclose or suggest all the features in independent claim 1 (as amended). Moreover, Rune, Tomohiko-US, Zisapel, Alexander, Lipp and Wesley fail to overcome the deficiencies noted above in Tomohiko and Sharony. Accordingly, no combination of Tomohiko and Sharony in combination with Rune, Tomohiko-US, Zisapel, Alexander, Lipp or Wesley would result in, or otherwise render obvious, claims 2-7, 10-12 and 14 at least by virtue of their dependencies (directly or indirectly) from independent claim 1.

In light of the above, the Applicants submit that all the pending claims are patentable over the prior art of record. The Applicants respectfully request that the Examiner withdraw the rejections presented in the outstanding Office Action, and pass the present application to issue.

Additionally, the Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues in the present application.

Respectfully submitted,

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